DOCUMENT RESUME

ED 265 582 CS 505 157

AUTHOR Becker, Samuel L.; And Others
TITLE Problems of Applying Communication/Behavior Theories to a Program of Smoking Reduction.
PUB DATE Nov 85
NOTE 22p.; Paper presented at the Annual Meeting of the Speech Communication Association (71st, Denver, CO, November 7-10, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Behavior Theories; Cancer; *Communication (Thought Transfer); Communication Problems; Communication Research; Physical Health; *Program Implementation; Program Improvement; *Research Problems; *Smoking; Speech Communication; Theories; *Theory Practice Relationship; Tobacco

ABSTRACT

Because the use of tobacco contributes to a large number of deaths each year in the United States, a current research project at the University of Iowa tests the application of a number of theoretical ideas--including social bonding, diffusion, and the spiral of silence--and attempts to develop new ideas in an effort to reduce smoking. The five-year study is a four-pronged behavioral change program directed at seventh graders who attended all the public schools in three Iowa cities. Two experimental and one control group were exposed to an anti-smoking curriculum during the first year of the study. Subsequent developments to be implemented in the experimental communities include knowledge reward, community competition, student involvement, and community involvement. The major problem encountered in this study was the difficulty of reinforcing group efforts to reduce smoking without having a negative effect on group bonding or attachment. Although problems clearly exist in trying to apply theory to real life, further research should be conducted because theory has no practical value unless it can be of some use in society. (DF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED265582

Problems of Applying Communication/Behavior Theories To a Program of Smoking Reduction

Samuel L. Becker, Julie A. Burke, Rebecca A. Arbogast, Michelle J. Naughton, and Ronald M. Lauer

Speech Communication Association Meeting
November 1985

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

BEST COPY AVAILABLE

The work reported here was supported in part by National Institutes of Health, National Heart, Blood, and Lung Institute grant #HL32847.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Samuel L. Becker

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS505157

Introduction

The twentieth century has been witness to a great variety of major changes that touch the lives of all of us. Most of us are well aware of the bulk of these--the sexual revolution, the civil rights revolution, the revolution in the means of waging war, to note but a few. The change which may have a far greater effect on us, though, is one about which few of us are aware. It has occured with little fanfare from the media; it has come about almost without notice. This is the revolution in the major causes of illness and death.

Through at least the middle of this century, the major threats to our health were viral or bacterial--diseases such as polio, diphtheria, whooping cough, tuberculosis, small pox, and yellow fever. These were our major health concerns. Through the great efforts of medical researchers, those threats to health and life have been virtually eliminated. As a result, today, the major threats to health and life are no longer viral or bacterial; instead, they are behavioral. They are caused by what we eat, our physical activity or lack thereof, and--most of all--our use of tobacco. The single most important cause of preventable sickness and death today is cigarette smoking (Department of Health and Human Services, 1983). The number of early deaths caused by cigarette smoking each year in the United States alone exceeds the number of American lives lost in World War I, Korea, and Vietnam combined (Warner, 1983). Almost a third of the deaths due to heart disease or cancer are

BEST COPY AVAILABLE

attributable to tobacco (Department of Health and Human Services, 1982, 1983). Smoking is also responsible for a fourth of all of the deaths in this country due to fire (McGuire, 1983).

Morbidity and mortality data are not the only relevant statistics that should be considered as we explore strategies for improving public health. Statistics on behavior are also relevant, especially as they point up the difficulty of bringing about change. For example, there is clear evidence that by the time they reach seventh grade virtually all children know that smoking is dangerous to their health. Yet, before they complete that grade, approximately 20 percent of them are experimenting with smoking (Evans et al., 1979). Although there has been a small decline in the percentage of adults who smoke cigarettes, the percentage continuing to smoke is still quite substantial. We found over 34 percent of adult men and over 27 percent of adult women in communities we have tested who are smokers, and the national figures are somewhat higher: 39 percent and 29 percent respectively. Those figures would be even higher if we included the use of smokeless tobacco. It is two decades since the much-publicized Surgeon General's report on the dangers of tobacco use and we still have a third of our adult population exposing themselves to those dangers.

The Challenge

I could go on and on with such statistics, but the point should be amply clear; the social costs of people's tobacco use are tremendous. And these costs cannot be substantially lowered

by medical intervention; the responsibility must be assumed by those of us who profess the behavioral sciences, and especially those of us in communication studies. We need to apply what we know about human behavior and what we know about ways to change behavior. And where present knowledge is inadequate for reducing, if not eliminating, tobacco use, we need to design research that will increase that knowledge.

Confronting the challenge to bring about change in the behavior of people outside the experimental laboratory brings a communication scholar immediately to the problem of identifying relevant theory and then operationalizing the theoretical concepts and ideas which were developed largely in the laboratory or concepts and ideas which were based on correlational studies. The purpose of this paper is to point and out discuss the problems of such operationalization. We will do this in the context of a major field study of ways to reduce smoking in which we are now engaged. In this research at the University of Iowa, we are testing the application of a number of the available theoretical ideas about communication and behavioral change and are developing additional ones. In the process, we are discovering some problems in the translation of theory to practice that suggest the need to extend those theories and to make them more precise.

Theoretical rationale

The methods we are testing to reduce the onset of smoking are based on a number of theoretical ideas: social bonding,

social learning, expectancy-value, innoculation, counter-attitudinal advocacy, diffusion, and the spiral of silence.

Social bonding theory, sometimes referred to as social control theory, posits that individuals are constrained from committing deviant behavior by their social bonds to conventional aspects of society. Four elements affect social bonding: attachment to conventional others, commitment to conventional goals and activities, involvement in conventional activities, and belief in conventional norms and values (Hirschi, 1969). The strength of these elements is directly related to the strength of the constraints against counternorm behavior, such as smoking.

Social learning theory suggests that children's initial experimentation with smoking is generally due to their imitation of others with whom they identify, interact, or admire. The behavior is then reinforced by the positive responses to this activity received from members of one's reference groups (Bandura, 1977; Akers, 1977).

Expectancy value theory predicts that the intention to smoke, which leads to smoking, is influenced by a combination of one's attitude toward smoking and subjective norm regarding smoking. Attitude toward smoking is shaped largely by one's beliefs about the consequences of smoking and the balance or valence of one's evaluations of those consequences, while subjective norm regarding smoking is the balance or the total of the beliefs one perceives relevant others have or would have if one smoked (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975).

Work on innoculation theory suggests that practice at resisting pressures to smoke--e.g., practice at turning down offers or dares from peers to try a cigarette, or practice at analyzing and arguing with cigarette advertising--will make it easier to resist such pressures in actual situations. Role playing helps one acquire the necessary interpersonal skills to handle such situations. Such role playing also increases the probability that these defensive tactics will be activated when youngsters find themselves in such situations: they are more likely to silently argue with advertising and to remember and perform their refusal speech when offered a cigarette (Elms, 1966; Janis & King, 1954; Watts, 1967).

Generalizing from research on counterattitudinal advocacy one would predict that young people who have begun experimenting with smoking or who are favorably disposed toward the idea of smoking are more likely to reduce those favorable attitudes, or even develop unfavorable attitudes, if they are placed in the position of publicly arguing against smoking (Hurd et al., 1980; Botvin & Eng, 1980).

Diffusion theory indicates that influences to smoke or not smoke flow through horizontal networks, rather than from top down; that opinion leaders are more likely to come from within the influenced group, rather than from outside; that persuasion flows most effectively through natural social networks; and that the stimulation of relevant interpersonal communication is important (Rogers, 1983).

Noelle-Neumann's Spiral of Silence theory (1973) suggests that the creation of an apparent community norm concerning smoking can be manipulated by increasing the public flow of antismoking messages in a community. Her theory is that when there are more public messages, from the media and elsewhere, on one side of an issue than the other, individuals who agree with that side are more likely to speak up and those who disagree are more likely to remain silent. The consequence of speaking up or becoming silent, in turn, is a spiraling increase in the perception that public opinion--the community norm--is on that side. Thus, a sustained communication campaign against smoking in a community should result in pressures to stop smoking or advocating smoking.

Study Design

Because the vast majority of adult smokers developed the habit prior to completing high school, and the modal age at which they began was 12 or 13, we believe the major efforts at reducing smoking must be directed at children in the middle school. Therefore we are focusing our four-pronged behavioral change program largely on 7th graders, trying to reduce the number of youngsters who start smoking, or the number who move beyond the stage of simply experimenting with tobacco.

Three communities of roughly equal size, social and economic structure, and general demographic characteristics are participating in this five year study. We are now in the second year. During the first year, a well-tested anti-smoking

curriculum was installed in the seventh grades of all public schools in the three cities and teachers were trained to handle it. There are three primary aspects of this curriculum: instruction on the social pressures to smoke, discussions and other activities led by peers leaders who are elected by the seventh graders, and role playing. In addition, in two of the cities, a series of competitions and rewards have been added to motivate participation, build attachment to peers, school, and community, and increase peer pressure not to smoke. Within classes, students are motivated to participate actively in the anti-smoking curriculum activities with two kinds of competition and accompanying rewards. Children who increase their relevant knowledge are rewarded with buttons bearing the program's logo (IPAS) in a contemporary design. The criterion for this increase is set quite low so that virtually all children who attend the sessions regularly should receive a button. There is also competititon among classes within each school to see which one best learns the curriculum. All members of the winning class are rewarded with T-shirts, again bearing the program's logo. Finally, there is competititon between the two cities to see in which city fewer seventh graders are smoking. The winning city gets to display a travelling trophy in the city hall for a year, and all seventh graders in the city get a reward of their choice. Last year it was free passes to a movie and a free ice cream. So we have <u>competition among classes</u> and reward for <u>knowledge</u>, and we have <u>competition between communities</u> and reward for <u>lowest</u>

BEST COPY AVAILABLE

rate of smoking. During the second year of the study, an additional condition is being added in the two experimental towns. In one, our student involvement condition, the seventh graders will engage in group efforts to develop and carry out a campaign to persuade either the upperclassmen in the school or the community as a whole not to smoke. For this, the classes within a school will be competing with each other. The assumption, of course, is that by trying to persuade others the children themselves will be the ones most persuaded. In addition, this activity should further enhance attachment to the group and social pressure from the group.

In the other experimental town, because we assume that young people are influenced by their perceptions of community norms, as well as their perceptions of the norms of peers, family, and school, we are trying to change those community norms or, at the minimum, the perception of those norms. This is our community involvement condition. For this condition, we are attempting to motivate the community to change itself. We are working with some of the people in the community who have been leaders in other community activities, especially health activities, encouraging them to develop a continuing, city-wide effort that will touch the various social strata in town. We are also encouraging them to obtain maximum publicity for all of their efforts in order to make the program as visible as possible to everyone, and especially to the youngsters still in school.

Our community organization efforts differ substantially from most of the major efforts which have been made to organize communities for the improvement of health. In those efforts, professional organizers have been hired to do the bulk of the organizing work and the directing of activities in the communities involved. We have taken a different tack because we believe it is essential that the program be perceived by citizens as belonging to the community, as growing out of community needs, and as a sign of the community's norms. Equally important, it is essential that the program be continuing and we think it is more likely to be if the disruption caused by the termination of a grant and the withdrawal of the professional organizers is avoided. We expect changes in leadership over the years, but it ought to be the type of natural change which occurs in long-lived community organizations, as young adults become involved and move up through the hierarchy of leadership positions as those at the top retire from active service. Most important of all, it is essential that the model for community organization we are developing, assuming it is successful, be generalizable to and practical for other communities. Since it is the rare community that can hire a professional organizer for an antismoking or other health campaign, and since a model of community organization based on a professional organizer and a model based on indigenous community leadership are bound to be quite different, the latter must be the goal if we want it to be workable for most communities.

The overall design of the study is summarized in Table 1. As the table shows, our control city has the curriculum only. We did not include a control with no curriculum since virtually all, if not all schools now include some sort of antismoking lessons as part of a general health course. In many states, such inclusion is required by the state educational authority. During the initial year of the study, the competitition and reward condition was added to the two experimental cities in order to study whether they enhance the impact of the curriculum. During the second year, the Student Involvement and Community Involvement conditions are being added and will continue for four years.

There are three major reasons for continuing the study for five years:

(1) We are interested in long-term, rather than short-term effects of our programs. Therefore, we need to test the subjects not only at the end of the year in which they were most heavily involved in the treatments, but also when they reach the 10th and 11th grades, the period during which, under normal conditions, the greatest increase in smoking occurs. If the program has had a substantial impact, that is the time at which it should be manifest.

(2) It will take a good bit of time for the Community Involvement activities to develop fully and to become sufficiently visible in the community to make most

BEST COPY AVAILABLE

teenagers aware of them so that perceptions of community norms are affected.

(3) We want to have all of these programs firmly embedded in the communities so that when we complete our study, they will continue as important parts of school and community activities.

We are collecting a wide variety of measures, but they can be categorized into five types:

(1) Saliva test for smoking administered to 7th graders each fall and spring, and subsequently each spring to these pupils as they reach the 8th, 9th, 10th, and 11th grades.

(2) Self reports of tobacco use, beliefs, attitudes, self concept, and attachment to peers, school, community, and parents. Administered on same schedule as (1).

(3) Knowledge gain from curriculum. Administered to 7th graders only, just before and after the antismoking unit.

(4) Beliefs and attitudes about smoking and perceptions of community norms re. smoking. Random sample of 500 adults in each community surveyed each fall.

(5) Community Health Climate surveyed each fall: industry and restaurant policies and practices re. smoking and material about smoking in the local media.

Problems of Theory Application

There are a number of difficulties we encountered in translating the theoretical ideas discussed earlier to the practical situation of reducing teenage tobacco use in our three Iowa communities. The initial problem involved finding a way to increase bonding or attachment to groups with antismoking norms. Earlier research in Iowa (Krohn et al., 1983) and elsewhere (Eckert, 1983; Rooney and Wright, 1982) has demonstrated that attachment to school and family is negatively related to probability of smoking, while attachment to peers who smoke is positively related to smoking. The theory does not suggest ways to increase bonding with groups which will reinforce nonsmoking and to reduce bonding with groups which reinforce smoking. We are making a leap from this theory, experimenting with competitition among classes and between communities, speculating that it should increase bonding to class and school (reference groups with antismoking norms) and should decrease bonding to friends who smoke. We have no more than speculation to go by. We have ample theory to explain the fact that young people and adults who are low in attachment to conventional reference groups, such as school and family, are more likely to engage in antinorm behavior, such as smoking. On the other hand, we have little theory to guide our efforts to increase such attachment. This is an important issue since data on smoking trends indicate clearly that the most serious smoking problems are increasingly found in such groups--the school dropout, the poor, etc. The same relationship is apparently found for alcohol and drug use among the young.

A second problem encountered in applying theory to the practical problem of reducing smoking among young people is in determining ways to reinforce group efforts to reduce the smoking of its members without having a negative effect on some groups. Specifically, to stimulate social pressure, group cooperation, and group attachment, some sort of reinforcement is necessary. For the magnitude of effort needed to have a meaningful impact on smoking behavior--which study after study has shown to be highly intractable--some highly involving activity is necessary. It was our conclusion that the only type of activity that is practical to employ in the school situation and which could have that type of impact is competition with rewards for winners. But if winners are rewarded, it means losers are punished--through nonreceipt of a prize. It is unclear whether that nonreceipt is likely to have a negative effect of sufficient magnitude to overcome whatever positive effect the reward has on the winning groups. We tried to minimize this possible boomerang effect by giving every youngster a prize who made any meaningful effort to at least learn the curriculum (a button with the program's logo). This may or may not turn the trick. The point is, though, that we have a hole in social learning theory that must be plugged if the theory is to be maximally useful for bringing about major social changes.

Theories of diffusion and community organization are extremely useful for post hoc explanations of the operations of such organizations and the natural diffusion of change. They are

BEST COPY AVAILABLE

considerably less useful for inducing or speeding change. The theories are inadequate in explaining the dynamics of contemporary American communities, with their large number of varied volunteer organizations, their interlocking leadership cadre, their relationship to socio- economic levels, and the factors that cause some leaders to be willing or unwilling to assume leadership in yet another organization.

Group and organizational theory is silent on the differences in the dynamics of short-lived and long-lived organizations or, among the latter, between organizations that must be steadily nurtured (such as an organization which is attempting to reduce tobacco, drug, or alcohol use or encourage people to follow a healthier diet or physical regimen) and organizations whose demands are more periodic (such as the United Way or Red Cross with their annual drives). These theories are equally silent on the kinds of reinforcement that are both practical and effective for leadership in various kinds of organizations. These theoretical gaps create problems for anyone attempting to bring about change in the health practices of a community through group and organizational activity and who looks to those theories for guidance. The problem is complicated by the fact that there is at least some evidence suggesting that the individuals who are the most effective opinion leaders vary with the type of goal (Katz and Lazarsfeld, 1955). Thus, change agents, at this point, when searching for community leaders to involve in a program must rely on their judgments of people, the availability of potential

leaders, the track records of these leaders, and luck. Theory should offer us more.

Yet another problem of community organization for which we have more folklore than theory to draw upon concerns the generalization that, for a program of social change to be effective, people in the community must perceive that it is their program, that it belongs to them and is not being imposed by outsiders. To the extent this generalization is valid for changes in health practices, we lack theoretical guidance on the extent to which and ways in which an external agent or agency can be involved before community members perceive that the program is not theirs.

Noelle-Neumann's Spiral of Silence Theory is based on public opinion data on issues in which media coverage is relatively one-sided. The theory is mute on ways in which the media might be influenced to shift the balance of coverage to the other side when change is desired. This issue is especially pertinent when the change desired is a reduction in tobacco or alcohol use or in the eating of so-called "junk foods" and processed foods. Advertising for these products is displayed prominently and continuously in the mass media, while information on their dangers is generally displayed less prominently and on an irregular and infrequent basis.

There is one additional problem encountered in field experiments of the sort in which we are engaged, one which is unrelated to the issue of applying theory but which still

BEST COPY AVAILABLE

deserves mention. This is the problem of sample size for a study in which the unit of manipulation is the community. For most major field trials of programs to change the behaviors which are harming people's health, the manipulation must be by city because the community health climate is such a major influence. Thus, the sampling unit is the city. This means that it is almost impossible to have truly adequate samples in such studies. In fact, in all of the major experiments we know that are being done today to change the health practices of individuals, there are samples of only one unit per cell. Thus, treatments are confounded with whatever differences exist between communities. This suggests a major need for a reasonable number of replications of each study.

Conclusions

We have pointed to a number of limitations in existing communication and other social scientific theories that make their use as guides for bringing about widespread changes in behavior difficult. There are two reasons for these limitations we believe. In some cases, the limitations are due to the fact that the theoretical development has been based largely on correlational or survey research of existing situations in which no attempt was made to bring about change. So generalizations to manipulating changes are often questionable. In other cases, the limitations are due to the theories being generated from laboratory research in which the manipulations and changes obtained parallel in only the most general sense the kinds of

changes sought and the kinds of manipulations that are practical when one is attempting to change the health of a community.

Clearly, some of the difficulties encountered in the study described in this paper may be due to the lack of imagination of the authors in operationalizing or applying some of the theories. To the extent that is the problem, it suggests that it would be useful for communication theorists to aid those who might apply their theories by suggesting a variety of ways in which they might be operationalized.

To the extent that the problem of application lies in the theory, rather than in the imagination of these appliers, it suggests the need for theory testing in a variety of field situations, or situations which are more generalizable to the field, and theory refinement and clarification based on the results.

Probably, of course, the problem rests in both laps, and we must stretch our reach by periodically reminding ourselves that, despite the enormous complexity of our subject matter, our research and theory must be <u>applicable</u> as well as <u>publishable</u>.

References

Ajzen, I., & Fishbein, M. <u>Understanding attitudes and predicting social behavior</u>. Englewood Cliffs, N.J.: Prentice-Hall, 1980.

Akers, R. L. <u>Deviant behavior: A social learning approach</u>. Belmont CA: Wadsworth, 1977.

Bandura, A. Social learning theory. Englwood Cliffs, N.Y.: Prentice-Hall, 1977.

Botvin, G., & Eng, A. A comprehensive school-based smoking prevention program. Journal of School Health, 1980, 50, 209-213.

Department of Health and Human Services. The health consequences of smoking: cardiovascular disease. A report of the surgeon general. Rockville, Md., 1983.

Department of Health and Human Services. The health consequences of smoking: cancer. A report of the surgeon general. Rockville, Md., 1982.

Eckert, P. Beyond the statistics of adolescent smoking. American Journal of Public Health, 1983, 73, 439-442.

Elms, A. C. Influence of fantasy ability on attitude change through role-playing, Journal of Personality and Social Psychology. 1966, 4, 35-43.

Evans, R.I., Henderson, A.H., Hill, P.C., & Raines, B.E. Current psychological, social, and educational programs in control and prevention of smoking: A critical methodological review. In A.M. Gotto & R. Paoletti (Eds.), Atherosclerosis reviews, Vol 6. New York: Raven Press, 1979.

Fishbein, M., & Ajzen, I. Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, Mass: Addison-Wesley, 1975.

Hurd, P.D., Johnson, C.A., Pechacek, T., Best, L.P., Jacobs, D.R., & Luepker, R.V. Prevention of cigarette smoking in

seventh grade students. Journal of Behavioral Medicine, 1980, 3, 15-28.

Janis, I. L., & King, B.T. The influence of role-playing on opinion change. Journal of Abnormal and Social Psychology, 1954, 49, 211-218.

Katz, E., & Lazarsfeld, P. F. Personal influence: The part played by people in the flow of mass communications. Glencoe: The Free Press, 1955).

McGuire, A. Cigarettes and fire deaths. New York State Journal of Medicine. 1983, 83, 1296-1298.

Rogers, E. M. Diffusion of innovations (3rd. ed.). New York: The Free Press, 1983.

Rooney, J., & Wright, T. An extension of Jessor and Jessor's problem behavior theory from marijuana to cigarette use. International Journal of Addictions, 1982, 17, 1273-1287.

Warner, K. E. The economics of smoking: dollars and sense. New York State Journal of Medicine 1983, 83, 1273-1274.

Watts, W.A. Relative persistence of opinion change induced by active compared to passive participation. Journal of Personality and Social Psychology, 1967, 5, 4-15.

BEST COPY AVAILABLE

Table 1

Design of Anti-smoking Study

	Year 1			Year 2			Year 3			Year 4			Year 5		
	M	C	B*	M	C	B	M	C	B	M	C	B	M	C	B
Curriculum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knowledge reward	X	X	-	X	X	-	X	X	-	X	X	-	X	X	-
Community competition	X	X	-	X	X	-	X	X	-	X	X	-	X	X	-
Student involvement	-	-	-	-	X	-	-	X	-	-	X	-	-	X	-
Community involvement	-	-	-	X	-	-	X	-	-	X	-	-	X	-	-

* M, C, and B are our three towns, Muscatine, Clinton, and Burlington, Iowa.

BEST COPY AVAILABLE